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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,979	02/02/2005	Shu Guo	Q86012	4431
23373 7590 04/23/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER				
SELLERS, ROBERT E				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/522,979

Applicant(s)

GUO ET AL

Examiner

Robert Sellers

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2007 and 13 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claims 6-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected inventions, there being no allowable generic or linking claim. The election was made **without** traverse in the reply filed on November 30, 2007. The election of the species of bisphenol A epoxy resin, itaconic acid, acrylic acid and tetrahydrophthalic anhydride in the response filed March 13, 2008 is acknowledged.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. Patent No. 4,428,807.

1. Lee et al. (col. 4, lines 45-46) discloses an epoxyester prepared by reacting a polyepoxide such as a diglycidyl ether of bisphenol A (col. 11, Example 4, lines 36-37) chain extended with a dicarboxylic acid (col. 2, lines 19-24) with an ethylenically unsaturated monocarboxylic acid such as acrylic acid (col. 4, line 27) further reacted with a dicarboxylic acid anhydride (col. 4, line 66 to col. 5, line 1). Example 4 shows a diglycidyl ether of bisphenol A chain extended with bisphenol A and reacted with acrylic acid to form the diacrylate.

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2. Although the claimed chain extension with a dicarboxylic acid is not exemplified, it would have been obvious to chain extend the diglycidyl ether of bisphenol A of Lee et al. with the disclosed dicarboxylic acid in order to increase the molecular weight just as the bisphenol A (col. 2, lines 19-24).
3. Although the claimed further reaction with a dicarboxylic acid anhydride is not exemplified, it would have been obvious to further react the secondary hydroxyl groups of the epoxyester of Lee et al. with a dicarboxylic acid anhydride as disclosed therein in order to introduce more carboxyl groups.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swisher et al. Patent No. 3,564,074 in view of Fekete et al. Patent No. 3,256,226.

4. Swisher et al. (col. 1, lines 27-30) reports a vinyl ester resin prepared by the reaction of an ethylenically unsaturated monocarboxylic acid such as acrylic acid (col. 2, line 63 and col. 6, Example 4, line 6) and a polyepoxide such as a diglycidyl ether of 4,4'-isopropylidene diphenol (col. 6, Example 4, lines 6-7, i.e. a diglycidyl ether of bisphenol A) and a dicarboxylic acid anhydride.

The claimed reaction of the epoxy resin with a dibasic acid is not recited.

5. Fekete et al. (col. 1, lines 18-45) teaches a polyhydroxy polyester having a formula within general formula (2) of claim 2 except for R_3' (col. 2, lines 26-36) prepared by the reaction of a dicarboxylic acid, an ethylenically unsaturated monocarboxylic acid such as acrylic acid (col. 4, lines 6-9) and an epoxy resin such as a diglycidyl ether of bisphenol A (col. 1, lines 25-45).

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6. It would have been obvious to pre-react the diglycidyl ether of bisphenol A of Swisher et al. with the dicarboxylic acid of Fekete et al. in order to lengthen the chain in the final polymer (Fekete et al., col. 2, lines 45-49).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. or Swisher et al. in view of Fekete et al. as applied to the claims hereinabove, and further in view of Jackson Patent No. 4,197,390

The claimed itaconic acid as dibasic acid (b) is not recited.

7. Jackson (col. 1, lines 4-44) teaches a vinyl ester prepared by reacting an ethylenically unsaturated monocarboxylic acid such as preferably acrylic acid (col. 3, lines 17-18) with a polyepoxide such as preferably glycidyl polyethers of 2,2-bis(4-hydroxyphenyl) propane (col. 2., lines 9-11, i.e. bisphenol A) in the presence of a small amount of a dicarboxylic acid such as itaconic acid (col. 3, line 25).

8. It would have been obvious to react the diglycidyl ether of bisphenol A of Lee et al. or Swisher et al. in view of Fekete et al. with a particular dicarboxylic acid such as the itaconic acid of Jackson in order to increase the thickening of the composition (col. 6, lines 4-6).

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The prior art made of record and not relied upon is considered pertinent to the disclosure.

9. Japanese Patent No. 2002-121258 espouses the reaction of the reaction product of an epoxy resin, an unsaturated monocarboxylic acid and a dibasic acid anhydride with an acid anhydride.

10. Elzer et al. Patent No. 4,842,987 (col. 8, line 55 to col. 9, line 32) describes the reaction product of a polyglycidyl ether with (meth)acrylic acid and a dicarboxylic acid wherein the hydroxyl groups are reacted with a dicarboxylic anhydride and the thus generated free carboxyl groups are finally reacted with a polyglycidyl ether.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/Robert Sellers/

Robert Sellers
Primary Examiner
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